FIG.1

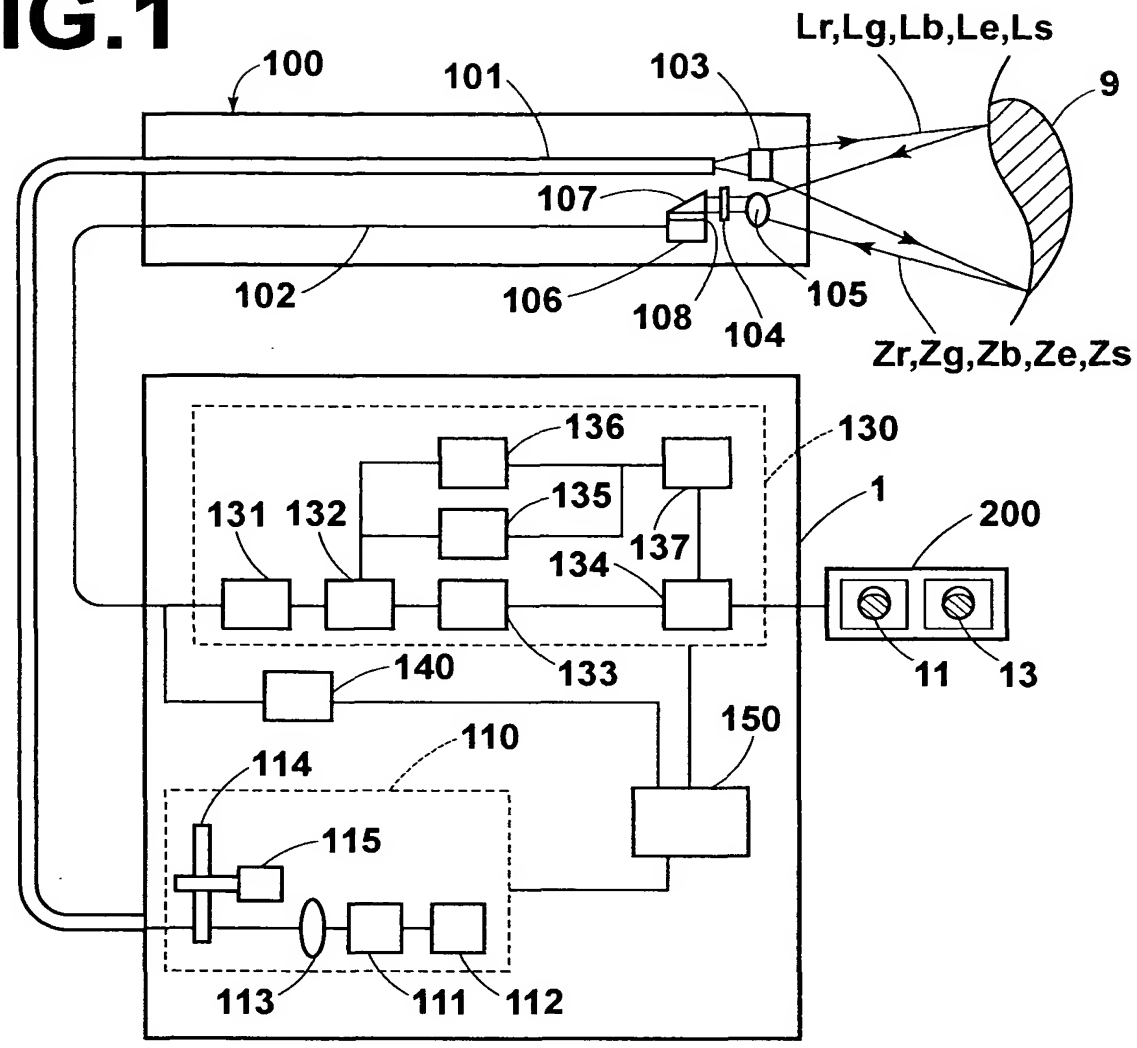
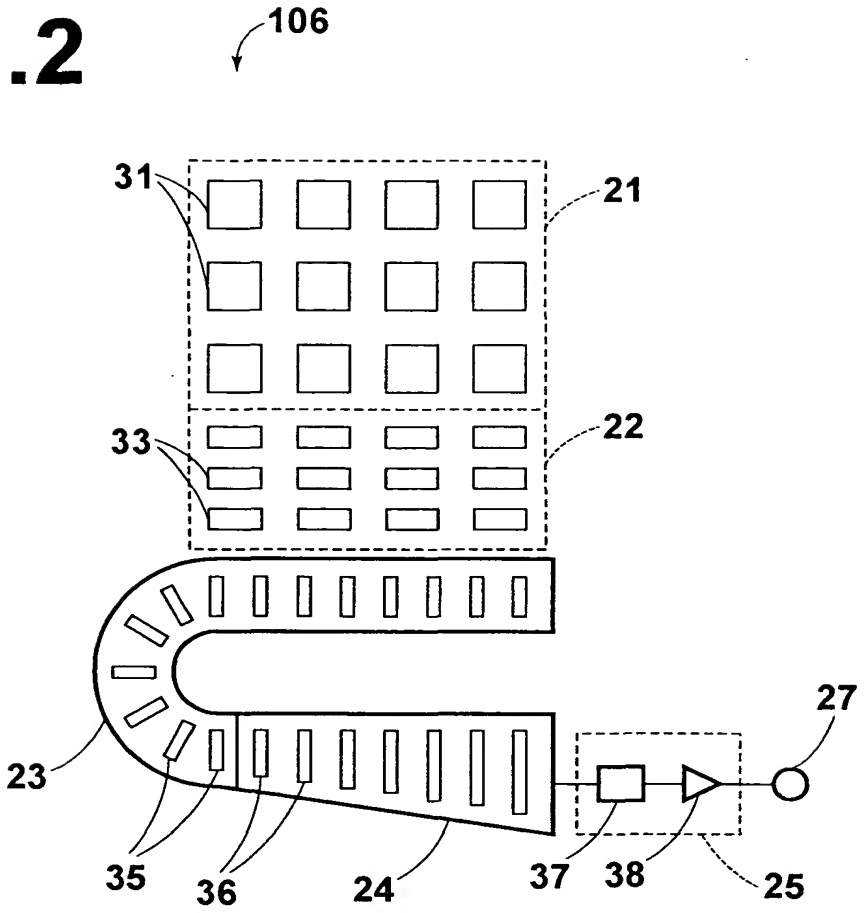

Lr,Lg,Lb,Le,Ls
9
100
101
103
107
102
106
108
104
105
Zr,Zg,Zb,Ze,Zs
136
130
135
131
132
137
1
200
134
140
133
11
13
150
110
114
115
113
111
112

FIG.2



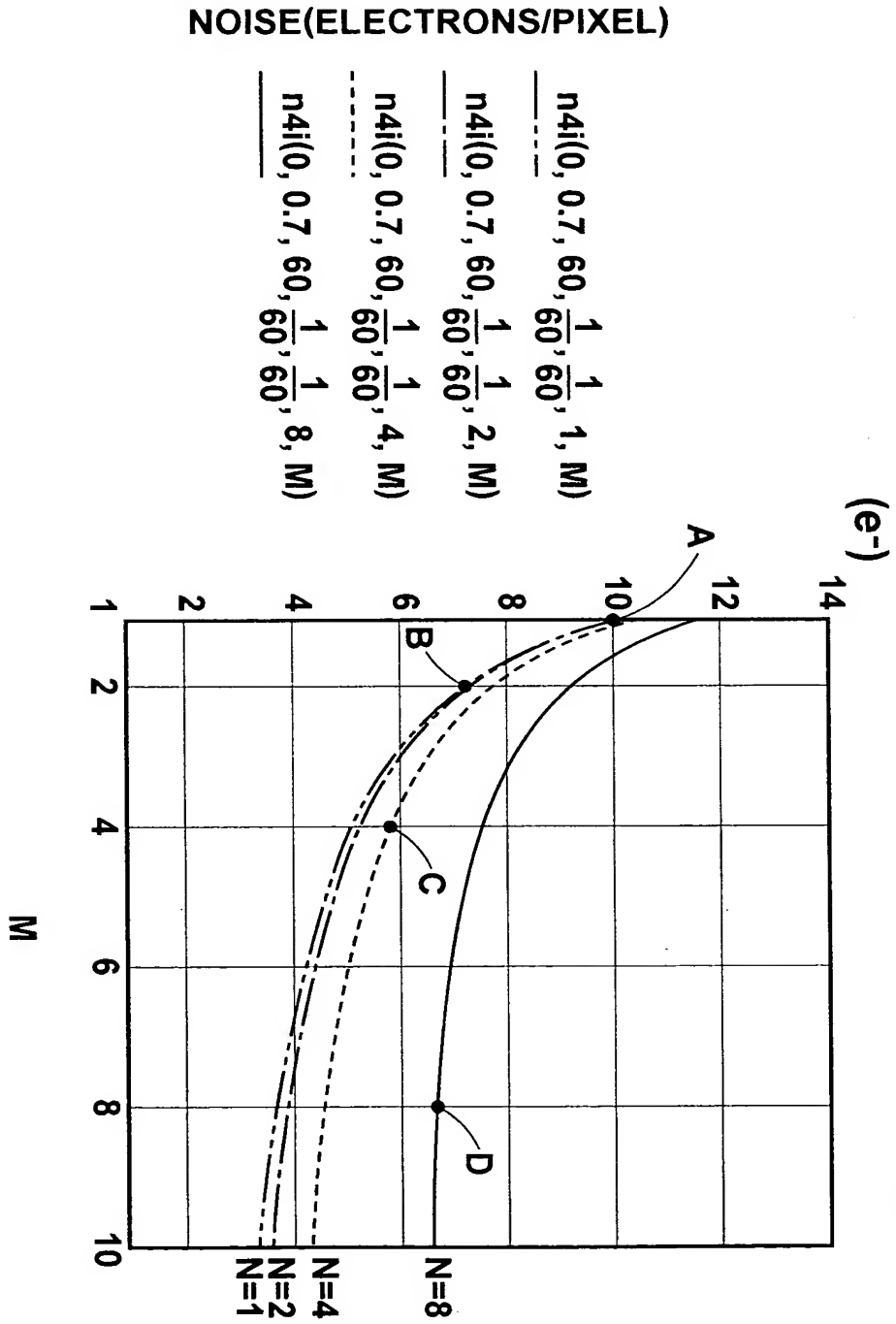

NOISE(ELECTRONS/PIXEL)
n4i(0, 0.7, 60, 1/60, 1/60, 1, M)
n4i(0, 0.7, 60, 1/60, 1/60, 2, M)
n4i(0, 0.7, 60, 1/60, 1/60, 4, M)
n4i(0, 0.7, 60, 1/60, 1/60, 8, M)
(e-)
M
A
B
C
D
N=1
N=2
N=4
N=8

FIG.3

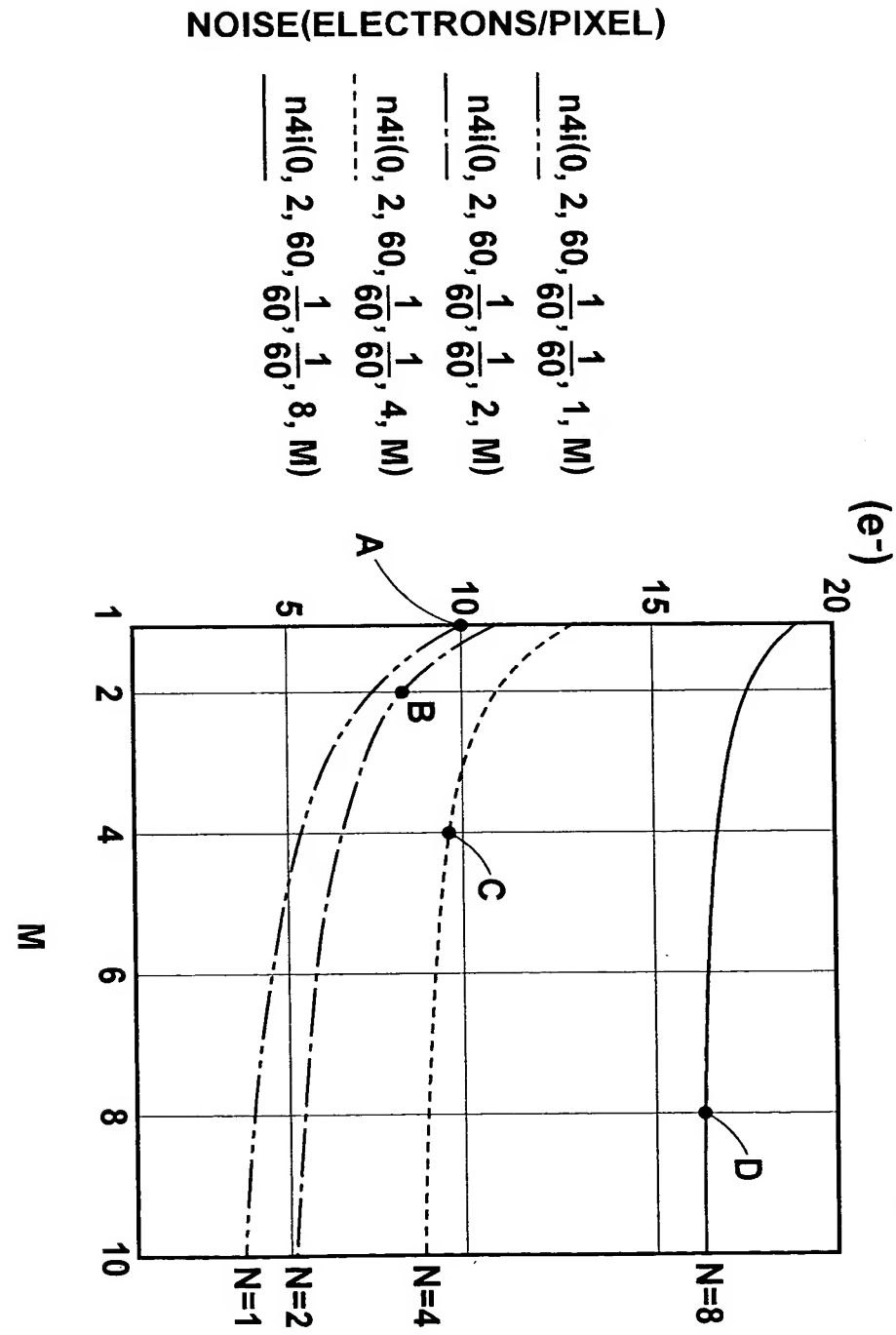

NOISE(ELECTRONS/PIXEL)
n4i(0, 2, 60, 1/60, 1/60, 1, M)
n4i(0, 2, 60, 1/60, 1/60, 2, M)
n4i(0, 2, 60, 1/60, 1/60, 4, M)
n4i(0, 2, 60, 1/60, 1/60, 8, M)
(e-)
1
5
10
15
20
M
1
2
4
6
8
10
A
B
C
D
N=1
N=2
N=4
N=8

FIG.4

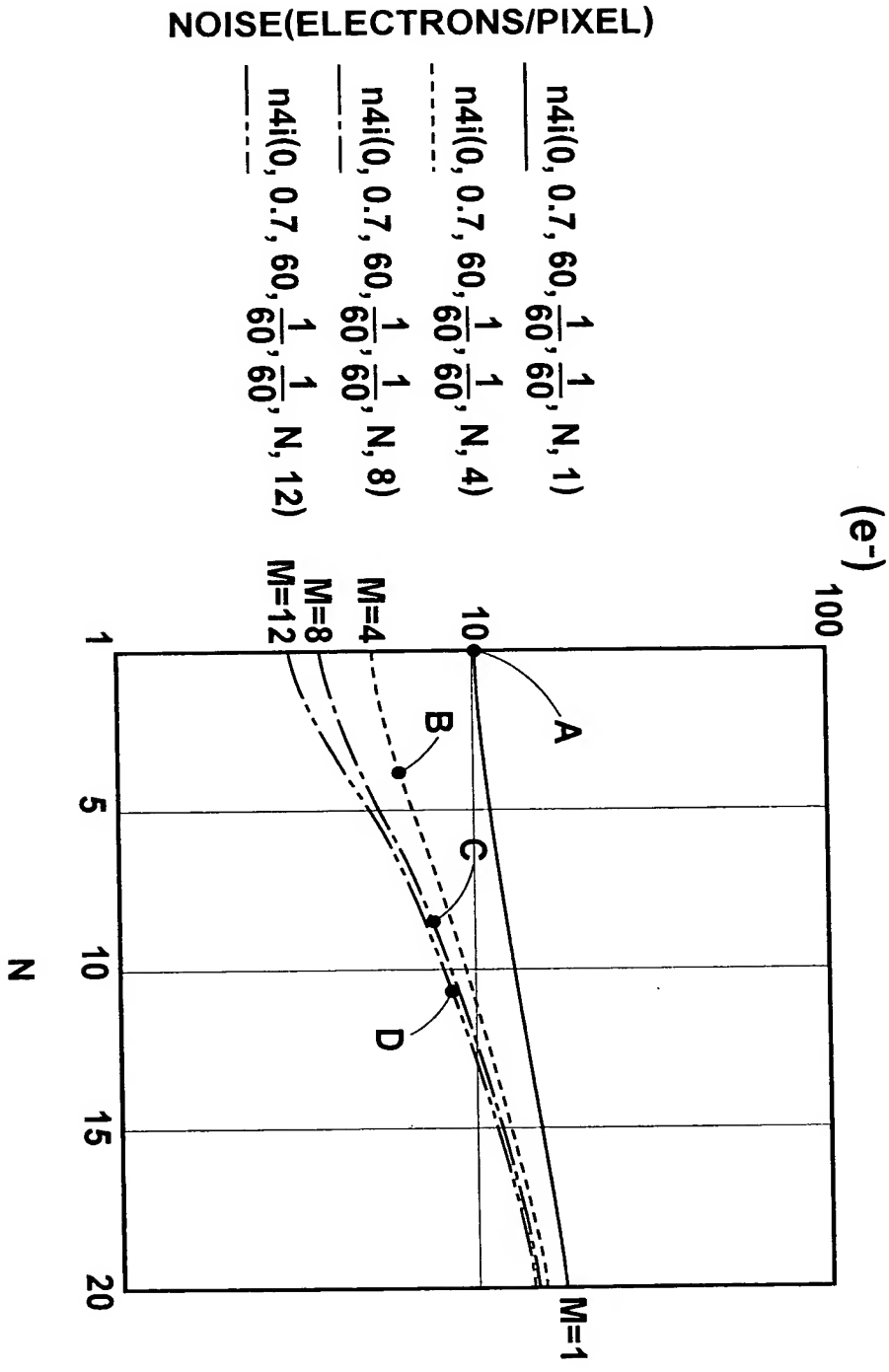

NOISE(ELECTRONS/PIXEL)
n4i(0, 0.7, 60, 1/60, 1/60, N, 1)
n4i(0, 0.7, 60, 1/60, 1/60, N, 4)
n4i(0, 0.7, 60, 1/60, 1/60, N, 8)
n4i(0, 0.7, 60, 1/60, 1/60, N, 12)
(e-)
100
10
1
M=1
M=4
M=8
M=12
A
B
C
D
1
5
10
15
20
N

FIG.5

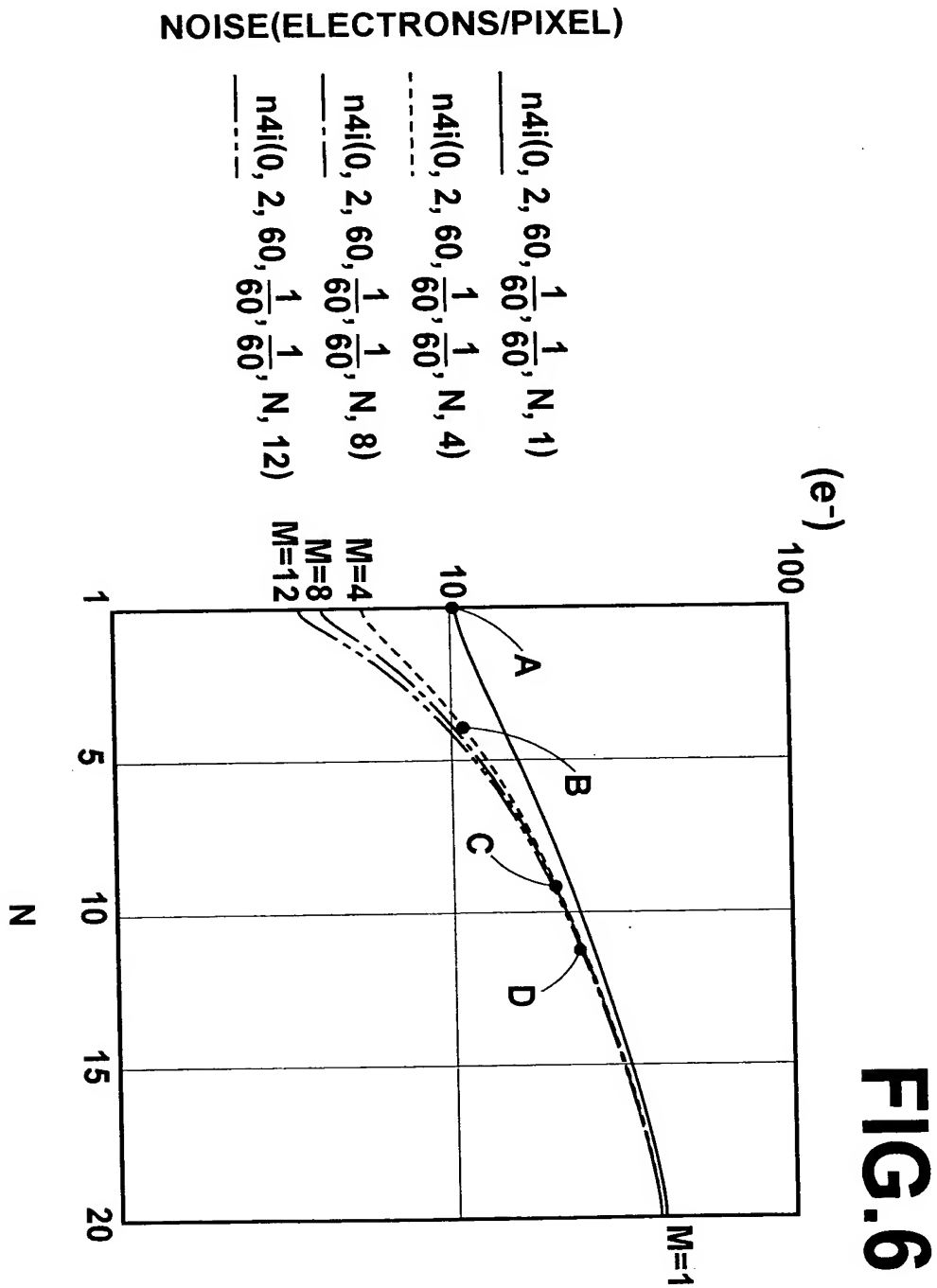
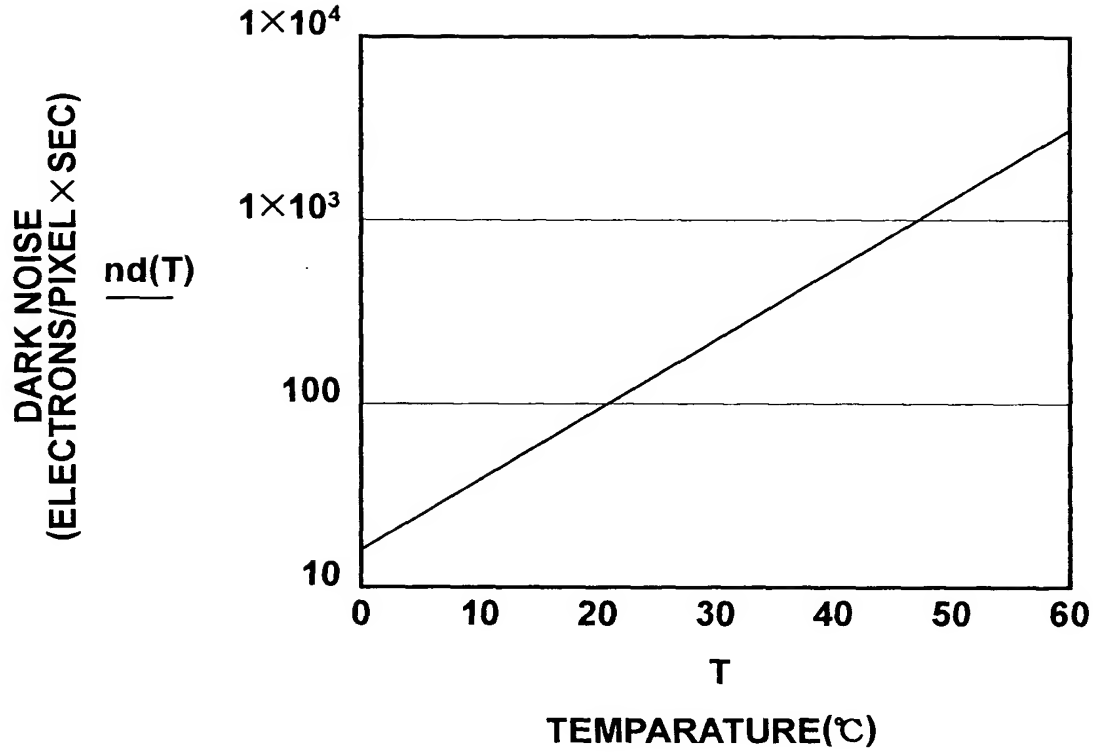

NOISE(ELECTRONS/PIXEL)
n4i(0, 2, 60, 1/60, 1/60, N, 1)
n4i(0, 2, 60, 1/60, 1/60, N, 4)
n4i(0, 2, 60, 1/60, 1/60, N, 8)
n4i(0, 2, 60, 1/60, 1/60, N, 12)
(e-)
100
10
1
M=4
M=8
M=12
A
B
C
D
M=1
5
10
15
20
N

FIG.6

FIG.7


DARK NOISE
(ELECTRONS/PIXEL×SEC)
nd(T)
1×10⁴
1×10³
100
10
0
10
20
30
40
50
60
T
TEMPARATURE(℃)

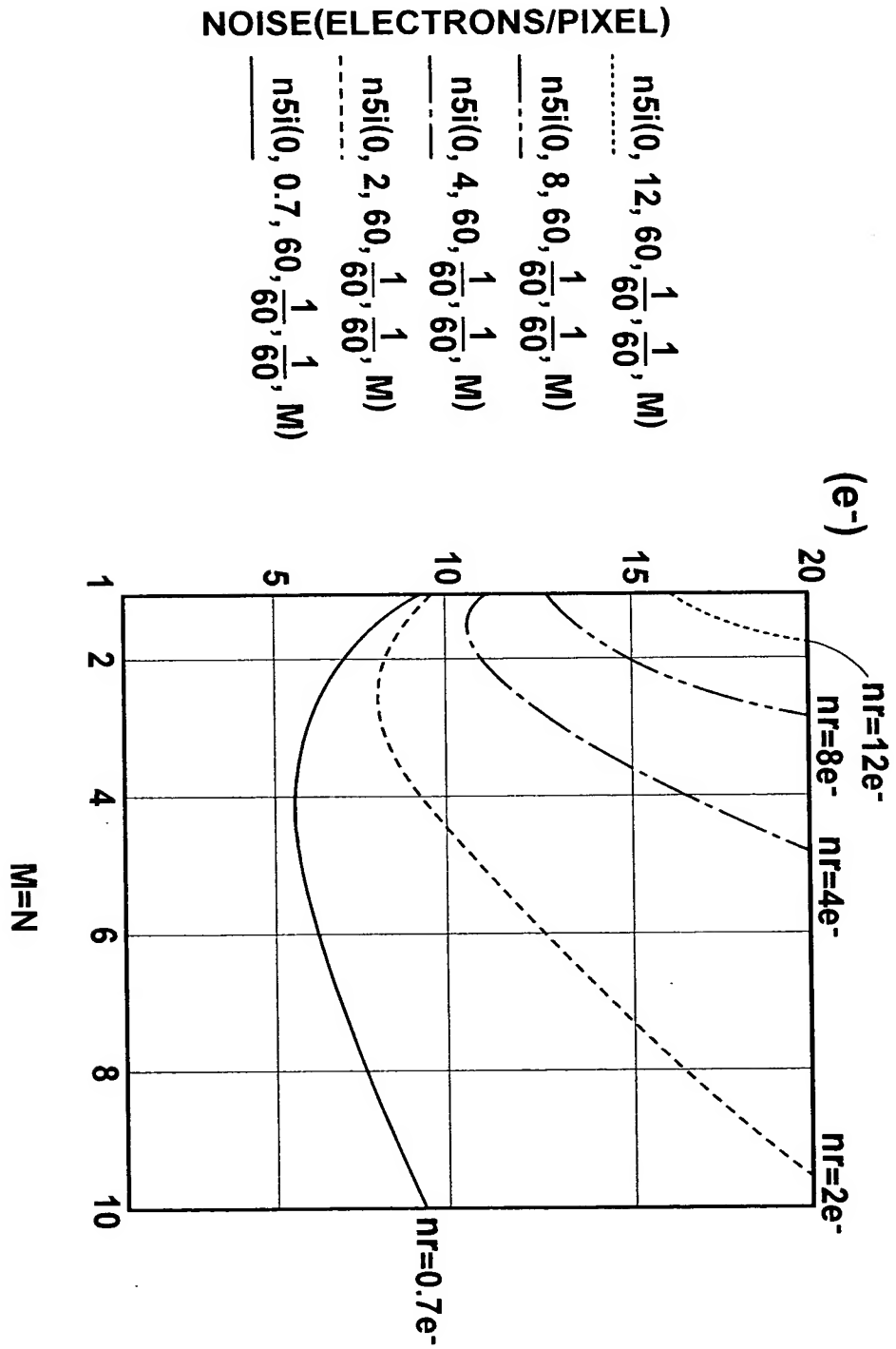

NOISE(ELECTRONS/PIXEL)
n5i(0, 12, 60, 1/60, 1/60, M)
n5i(0, 8, 60, 1/60, 1/60, M)
n5i(0, 4, 60, 1/60, 1/60, M)
n5i(0, 2, 60, 1/60, 1/60, M)
n5i(0, 0.7, 60, 1/60, 1/60, M)
(e-)
20
15
10
5
1
2
4
6
8
10
M=N
nr=12e-
nr=8e-
nr=4e-
nr=2e-
nr=0.7e-

FIG.8

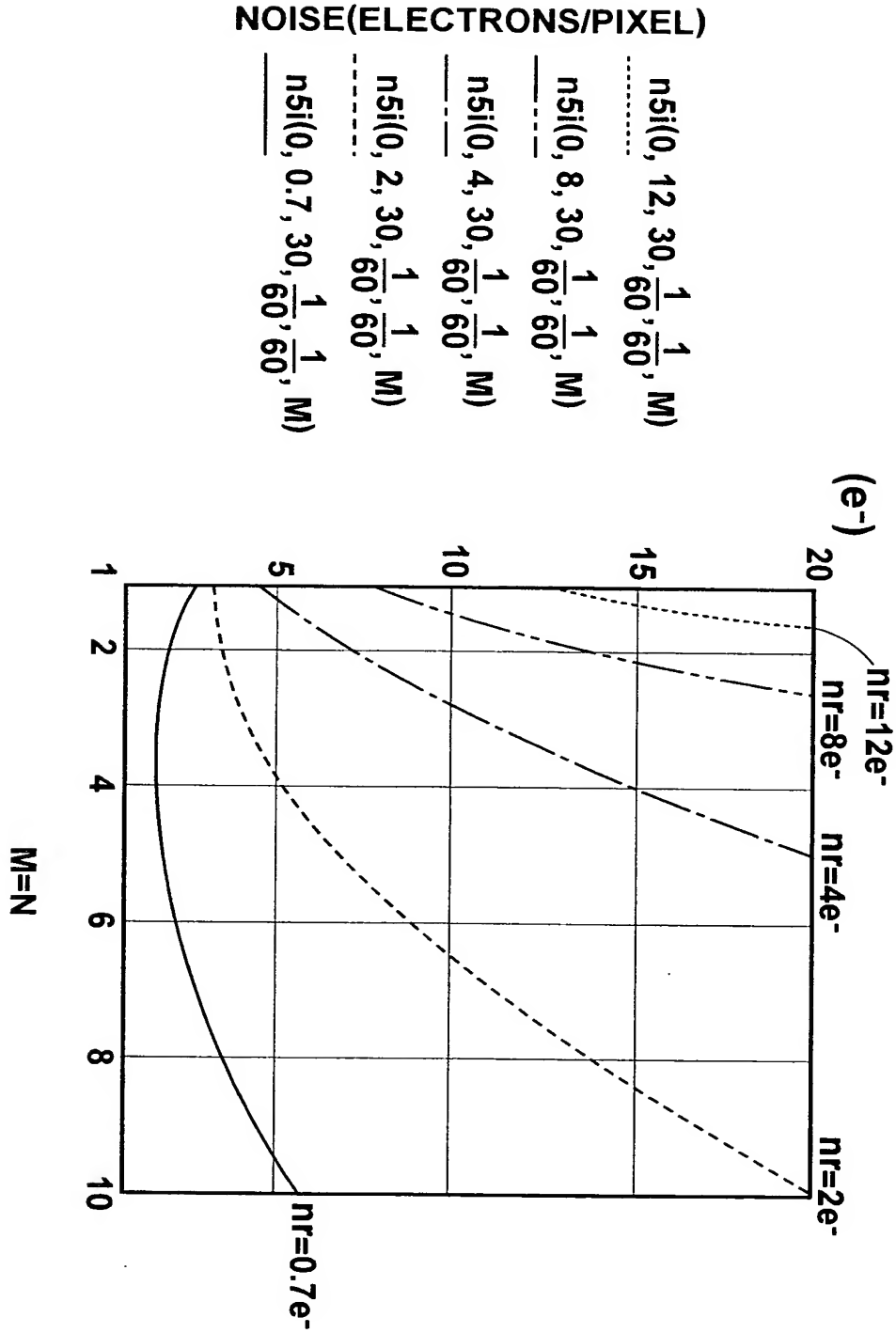

NOISE(ELECTRONS/PIXEL)
n5i(0, 12, 30, 1/60, 1/60, M)
n5i(0, 8, 30, 1/60, 1/60, M)
n5i(0, 4, 30, 1/60, 1/60, M)
n5i(0, 2, 30, 1/60, 1/60, M)
n5i(0, 0.7, 30, 1/60, 1/60, M)
(e-)
20
15
10
5
1
2
4
6
8
10
M=N
nr=12e-
nr=8e-
nr=4e-
nr=2e-
nr=0.7e-

FIG.9

FIG.10

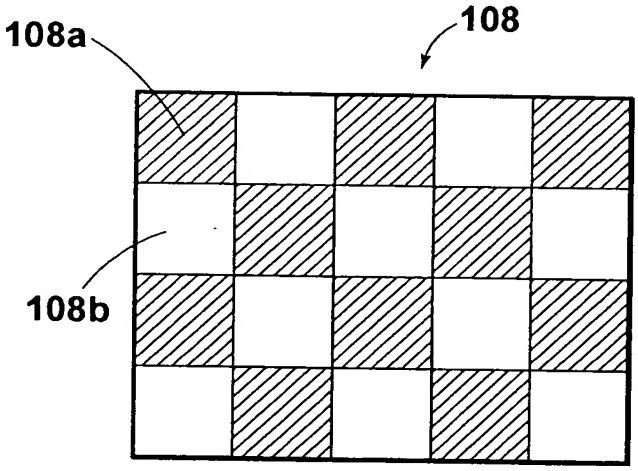
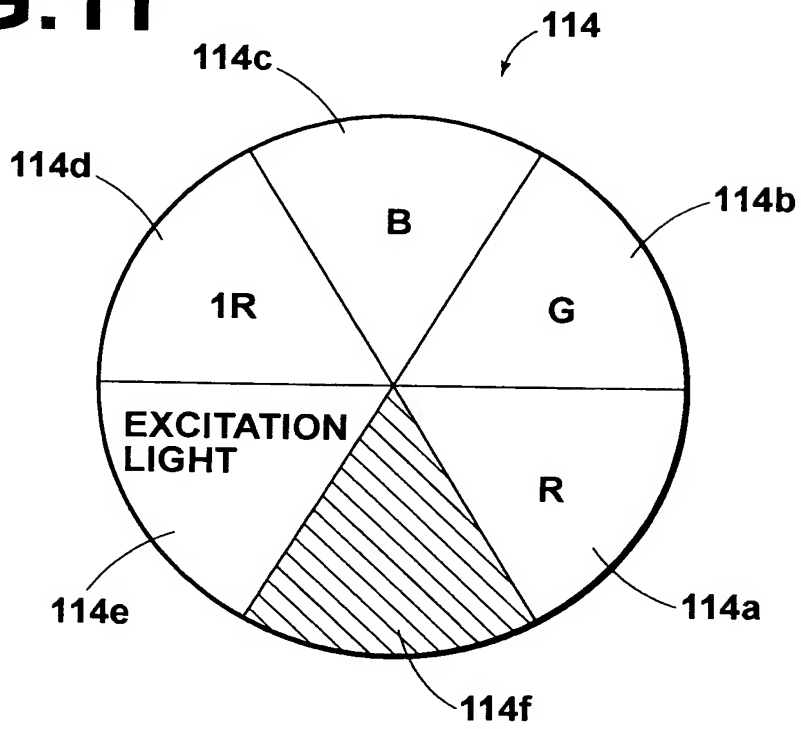

108a
108
108b

FIG.11


114
114c
114d
114b
B
1R
G
EXCITATION
LIGHT
R
114e
114a
114f